

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Michel Encrenaz Art Unit : 2625
Serial No.: 10/571,014 Examiner : David L. Suazo
Filed : February 5, 2007 Confirmation No.: 6698
Title : METHODS, APPARATUS AND SOFTWARE FOR PRINTING LOCATION
PATTERN AND PRINTED MATERIALS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

I. Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPO Holdings, LLC.

II. Related Appeals and Interferences

Appellant is not aware of any related appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 83-92, which are the subject of this appeal, are pending.

Claims 1-82 are canceled.

Claims 83-92 stand rejected.

Appellant appeals all rejections of the pending claims 83-92.

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IV. Status of Amendments

The amendments filed November 23, 2009, have been entered and acted upon by the Examiner.

No amendments were filed after the final Office action dated March 19, 2010.

V. Summary of Claimed Subject Matter

In the following Summary, the citations in parentheses are representative of support provided in the application.

A. Independent claim 83

The aspect of the invention defined in independent claim 83 is a print control system configured to control a single digital printer (FIGS. 8-9; page 50, lines 1-29) having a first machine-readable ink and a second ink that is not machine-readable at the same wavelength as said first ink (page 6, line 30 – page 7, line 2; page 48, lines 18-22), said system being configured to cause said printer to print documents having both (i) machine-readable pattern printed in the first ink, wherein the pattern is configured to enable a digital pen (FIG. 2; page 2, lines 14-26) to acquire data to enable its position in said pattern to be determined (page 38, lines 1-9; page 49, lines 8-18), and (ii) human-discernable content, printed in the second ink, that is not read by said pen in use (page 38, lines 1-9), said system being configured to route data representative of content colour to (i) a colour separation process, and to (ii) a half-toning process, and to (iii) a masking process, and where said system is configured to route data representation of pattern so as to by-pass a half-toning process (page 7, lines 6-10; page 37, lines 1-8; page 65, lines 13-22; FIG. 14b).

B. Dependent claim 84

Claim 84 depends from claim 83 and recites that the system is configured to route data representative of pattern so as to by-pass a masking process (page 6, lines 19-24; page 37, lines 1-8; page 67, lines 11-19).

C. Independent claim 87

The aspect of the invention defined in independent claim 87 is a method of printing a document. The method comprises digitally printing a human-discernable content and a machine-readable position-determining pattern (page 6, line 30 – page 7, line 2; page 48, lines 18-22), configured to enable a digital pen (FIG. 2; page 2, lines 14-26) to determine the pen's position in a pattern space onto the document using a single digital printer (FIGS. 8-9; page 50, lines 1-29). The digital printer includes a first ink which is not machine-readable at a particular wavelength of electromagnetic radiation and a second ink that is machine-readable at the said particular wavelength (page 6, line 30 – page 7, line 2; page 38, lines 1-9 and 15-21; page 48, lines 18-22; page 49, lines 8-18). The method also comprises printing the content with the first ink and not the second ink, at least where said content overlies said pattern (page 48, lines 11-22; page 50, lines 9-15; page 74, lines 6-11; page 77, line 9 – page 78, line 2). The method further comprises printing the pattern using the second ink. Data representative of content is half-toned, and wherein data representation of pattern bypasses a half-toning process (page 7, lines 6-10; page 37, lines 1-8; page 65, lines 13-22; FIG. 14b).

D. Dependent claim 88

Claim 88 depends from claim 87 and recites that data representative of content is operated upon by a masking process, and data representation of pattern bypasses a masking process (page 6, lines 19-24; page 37, lines 1-8; page 67, lines 11-19).

E. Independent claim 89

The aspect of the invention defined in independent claim 89 is a method of printing on demand a page or other article. The method comprises printing, using a single digital printer (FIGS. 8-9; page 50, lines 1-29), a machine-readable position-determining pattern with a first ink. The pattern is configured to enable a digital pen (FIG. 2; page 2, lines 14-26) to determine the pen's position in a pattern space, and wherein the pattern is readable at a specific, optionally non-visible, wavelength (page 6, line 30 – page 7, line 2; page 38, lines 1-9 and 15-21; page 48, lines 18-22; page 49, lines 8-18). The method also comprises printing, using the single digital printer, human-discernable content in a second ink. The method further comprises processing the content data differently from the pattern data during data

processing performed to print the document (page 7, lines 6-10; page 37, lines 1-8; page 65, lines 13-22; FIG. 14b).

VI. Grounds of Rejection to be Reviewed on Appeal

A. Claim 83 is rejected under 35 U.S.C. § 103 (a) over Rumph (U.S. 6,429,948) in view of "Applicant's described Prior Art" and Clouthier (U.S. 5,949,964).

B. Claim 84 is rejected under 35 U.S.C. § 103 (a) over Rumph (U.S. 6,429,948) in view of "Applicant's described Prior Art," Clouthier (U.S. 5,949,964), and Mostafavi (U.S. 5,642,444).

C. Claims 85-86 are rejected under 35 U.S.C. § 103 (a) over Rumph (U.S. 6,429,948) in view of "Applicant's described Prior Art," Clouthier (U.S. 5,949,964), Funahashi (U.S. 2002/0036645), and Cox (U.S. 5,140,686).

D. Claim 87 is rejected under 35 U.S.C. § 103 (a) over Nelson (U.S. 6,132,024) in view of "Applicant's described Prior Art" and Clouthier (U.S. 5,949,964).

E. Claims 88-92 are rejected under 35 U.S.C. § 103 (a) over Nelson (U.S. 6,132,024) in view of "Applicant's described Prior Art," Clouthier (U.S. 5,949,964), and Rumph (U.S. 6,429,948).

VII. Argument

A. Applicable standards for sustaining a rejection under 35 U.S.C. § 103(a)

"A patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." 35 U.S.C. §103(a).

In an appeal involving a rejection under 35 U.S.C. § 103, an examiner bears the initial burden of establishing *prima facie* obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). To support a *prima facie* conclusion of obviousness, the prior art must disclose or suggest all the limitations of the claimed invention.¹ See In re

¹ The U.S. Patent and Trademark Office has set forth the following definition of the requirements for establishing a *prima facie* case of unpatentability (37 CFR § 1.56(b)(ii)):

A *prima facie* case of unpatentability is established when the information compels a conclusion that a claim is unpatentable

Lowry, 32 F.3d 1579, 1582, 32 USPQ2d 1 031, 1034 (Fed. Cir. 1994). If the examiner has established a *prima facie* case of obviousness, the burden of going forward then shifts to the applicant to overcome the *prima facie* case with argument and/or evidence. Obviousness, is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. This inquiry requires (a) determining the scope and contents of the prior art; (b) ascertaining the differences between the prior art and the claims in issue; (c) resolving the level of ordinary skill in the pertinent art; and (d) evaluating evidence of secondary consideration. See KSR Int'l Co. v. Teleflex Inc., No. 127 S. Ct. 1727, 1728 (2007) (citing Graham v. John Deere, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966)). If all claim limitations are found in a number of prior art references, the fact finder must determine whether there was an apparent reason to combine the known elements in the fashion claimed. See KSR, 1741. This analysis should be made explicit. KSR at 1741 (citing In re Kahn, 441 F. 3d 977, 988 (Fed. Cir. 2006): “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”).

C. Claim 83

Claim 83 is rejected under 35 U.S.C. § 103 (a) over Rumph (U.S. 6,429,948) in view of “Applicant's described Prior Art” and Clouthier (U.S. 5,949,964).

Independent claim 83 recites:

83. (Previously Presented) A print control system configured to control a single digital printer having a first machine-readable ink and a second ink that is not machine-readable at the same wavelength as said first ink, said system being configured to cause said printer to print documents having both (i) machine-readable pattern printed in the first ink, wherein the pattern is configured to enable a digital pen to acquire data to enable its position in said pattern to be determined, and (ii) human-discernable content, printed in the second ink, that is not read by said pen in use, said system being configured to route data representative of content colour

under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

to (i) a colour separation process, and to (ii) a half-toning process, and to (iii) a masking process, and where said system is configured to route data representation of pattern so as to bypass a half-toning process.

The rejection of independent claim 83 under 35 U.S.C. § 103(a) over Rumph in view of "Applicant's described Prior Art" and Clouthier should be withdrawn because the cited art, taken alone or in any permissible combination, does not disclose or suggest each and every one of the elements of the claim.

For example, Rumph in view of "Applicant's described Prior Art" and Clouthier does not disclose or suggest the "print controller" element of claim 83 (i.e., a print controller configured to cause a single printer "to print documents having both (i) machine-readable pattern printed in the first ink, wherein the pattern is configured to enable a digital pen to acquire data to enable its position in said pattern to be determined, and (ii) human-discernable content, printed in the second ink, that is not read by said pen in use").

In support of the rejection of claim 83, the Examiner has acknowledged that neither Rumph nor Clouthier discloses or suggests the "print controller" element of claim 83. In an effort to make-up for this lack of disclosure, the Examiner has taken the position that Appellant's description of the Anoto system in the Background section of the patent application (see page 2, line 28 -- page 5, line 19) discloses the "print controller" element of claim 83. In particular, the Examiner has taken the position that the Background description "teaches the feature of having a first machine-readable ink and a second ink, or inks, that is/are not machine-readable at the same wavelength as said first ink" and a "system being configured to cause said printer to print documents having both" (see page 5, last ¶ of the final Office action).

Contrary to the Examiner's position, however, the Background description of the Anoto system does not disclose a print controller configured to cause a single printer to print documents having both "a first machine-readable ink" (i.e., process black) and "a second ink that is not machine-readable at the same wavelength as said first ink" (i.e., Anoto substitute black). Instead, the Background description expressly discloses that the Anoto substitute black ink should be printed on top of the process black ink pattern using a printer in which the black channel of the printer (e.g., the K-channel in a CMYK printer) prints with the Anoto substitute black ink. The printer described in the Background description of the Anoto system has only a single black channel (see page 5, lines 12-14). Therefore, one skilled in the

art would understand from this description that a digital pen enabled document is produced by: first, printing the pen-readable pattern using a first printer with a black channel containing the process black ink; and second, printing the human-discernable content on top of the pen-readable pattern using a second printer with a black channel containing the Anoto substitute black ink. Thus, contrary to the Examiner's position, the Background section of Appellant's application does not disclose or suggest the "print controller" element of claim 83.

The printers described in Rumph and Clouthier also have only a single black channel (see, e.g., col. 33, lines 39-45 of Rumph and col. 1, lines 28-34 of Clouthier). Consequently, one skilled in the art reading Rumph in view of the Background description of the Anoto system and Clouthier necessarily would include that two separate printers would be used to create a digital pen enabled document containing both a pen-readable pattern printed in process black ink and a human-discernable pattern printed in Anoto substitute black ink.

Thus, Rumph in view of the Background description of the Anoto system and Clouthier does not disclose or suggest the "print controller" element of claim 83. For at least this reason, the rejection of independent claim 83 over Rumph in view of "Applicant's described Prior Art" and Clouthier should be withdrawn.

Rumph in view of the Background description of the Anoto system and Clouthier also does not disclose or suggest the "by-pass" element of claim 83 (i.e., "where said system is configured to route data representation of pattern so as to by-pass a half-toning process").

In support of the rejection of independent claim 83, the Examiner has acknowledged that Rumph in view of the Background description of the Anoto system does not disclose or suggest the "by-pass" element of claim 83 (see second to last ¶ on page 6 of the final Office action). In an effort to make-up for this lack of disclosure, the Examiner has taken the position that "Clouthier et al. teaches a system is adapted to route data representation of a pattern so as to by-pass a half-toning process" (see last three lines on page 6 of the final Office action).

Contrary to the Examiner's position, however, Clouthier does not make-up for the failure of Rumph in view of the Background description of the Anoto system to disclose or suggest the "by-pass" element of claim 83. In particular, Clouthier discloses a system in which the halftoning of pixels is controlled by a halftone type identifier that is set by a classifying that classifies print data into one of plurality of image types that is associated with

a particular halftone process (see, e.g., col. 2, lines 37-42, col. 3, lines 45-49, col. 5, lines 1-11 and 15-17). In accordance with Clouthier's disclosure "... any image type which is not to be subjected to a halftone operation may be assigned a '00' halftone type identifier" and "...if the halftone type identifier indicates that a bypass is to occur (i.e., '00'), the pixel is passed directly through halftone module 26 via bypass 36 to print engine 28" (col. 4, lines 4-6, and col. 5, lines 12-15; FIG. 1). Contrary to the Examiner's implicit assumption, however, Clouthier does not disclose anything that would have one skilled in the art any apparent reason to route data representation of the pen-readable pattern to be printed using process black ink so as to by-pass a half-toning process. Indeed, Clouthier does not disclose what type of print data would be assigned the '00' halftone type identifier.

Since Rumph in view of the Background description of the Anoto system does not disclose anything about by-passing a half-toning process and Clouthier does not disclose what type of print data should be passed directly through the halftone module via bypass 36, Rumph in view of the Background description of the Anoto system and Clouthier does not disclose or suggest the "by-pass" element of claim 83. For at least this additional reason, the rejection of independent claim 83 over Rumph in view of "Applicant's described Prior Art" and Clouthier should be withdrawn.

D. Dependent claim 84

Claim 84 is rejected under 35 U.S.C. § 103 (a) over Rumph (U.S. 6,429,948) in view of "Applicant's described Prior Art," Clouthier (U.S. 5,949,964), and Mostafavi (U.S. 5,642,444).

Claim 84 depends from independent claim 83. Mostafavi does not make-up for the failure of Rumph in view of "Applicant's described Prior Art" and Clouthier to disclose or suggest the elements of independent claim 83 discussed above. Therefore, the rejection of claim 84 under 35 U.S.C. § 103(a) over Rumph in view of "Applicant's described Prior Art," Clouthier, and Mostafavi should be withdrawn for at least the same reasons explained above in connection with independent claim 83.

Claim 84 also is patentable over Rumph in view of "Applicant's described Prior Art," Clouthier, and Mostafavi for the following additional reasons.

Claim 84 depends from claim 83 and recites that the system is configured to route data representative of pattern so as to by-pass a masking process.

In support of the rejection of claim 84, the Examiner has taken the position that (lines 3-5 on page 8 of the final Office action):

Mostafavi discloses a control system adapted to route data representative of a pattern so as to by-pass a masking process. (Figure 5, item 20 and column 6, lines 45-50).

The "masking means" disclosed in col. 5, lines 3-5, of Mostafavi, however, is not an element of a printer system. For example, is not a masking operator for determining what content is printed at each pixel of a printing operation, as described, e.g., in col. 29, lines 24-33 of Rumph. Instead, Mostafavi's masking means is a mask processing element (MPE) register that masks processing elements in an image processing chip, where a masking signal controls whether or not particular image processing elements are bypassed (see, e.g., col. 3, lines 23-33, which describes that the masking means is used to mask processing elements that are not needed and to mask defective processing elements). Thus, contrary to the Examiner's position, Mostafavi does not make-up for the acknowledged failure of Rumph, "Applicant's described Prior Art," and Clouthier to disclose the elements of claim 84. In addition, one skilled in the art would not have had any apparent reason to combine Mostafavi's processing element mask with the printer masking processing disclosed in Rumph.

For at least this additional reason, the rejection of claim 84 over Rumph in view of "Applicant's described Prior Art," Clouthier, and Mostafavi should be withdrawn.

E. Claims 85-86

Claims 85-86 are rejected under 35 U.S.C. § 103 (a) over Rumph (U.S. 6,429,948) in view of "Applicant's described Prior Art," Clouthier (U.S. 5,949,964), Funahashi (U.S. 2002/0036645) and Cox (U.S. 5,140,686).

Each of claims 85-86 depends from independent claim 83. Funahashi in view of Cox does not make-up for the failure of Rumph in view of "Applicant's described Prior Art" and Clouthier to disclose or suggest the elements of independent claim 83 discussed above. Therefore, the rejection of claims 85-86 under 35 U.S.C. § 103(a) over Rumph in view of "Applicant's described Prior Art," Clouthier, Funahashi, and Cox should be withdrawn for at least the same reasons explained above in connection with independent claim 83.

E. Claim 87

Claim 87 is rejected under 35 U.S.C. § 103 (a) over Nelson (U.S. 6,132,024) in view of "Applicant's described Prior Art" and Clouthier (U.S. 5,949,964).

Independent claim 87 recites:

87. (Previously Presented) A method of printing a document comprising:

- digitally printing a human-discernable content and a machine-readable position-determining pattern, configured to enable a digital pen to determine the pen's position in a pattern space onto the document using a single digital printer, wherein the digital printer includes a first ink which is not machine-readable at a particular wavelength of electromagnetic radiation and a second ink that is machine-readable at the said particular wavelength; and
- printing the content with the first ink and not the second ink, at least where said content overlies said pattern; and
- printing the pattern using the second ink;
- wherein data representative of content is half-toned, and wherein data representation of pattern bypasses a half-toning process.

The rejection of independent claim 87 under 35 U.S.C. § 103(a) over Nelson in view of "Applicant's described Prior Art" and Clouthier should be withdrawn because the cited art, taken alone or in any permissible combination, do not disclose or suggest each and every one of the elements of the claim.

For example, Nelson in view of "Applicant's described Prior Art" and Clouthier does not disclose or suggest the first "printing" element of claim 87 (i.e., "digitally printing a human-discernable content and a machine-readable position-determining pattern, configured to enable a digital pen to determine the pen's position in a pattern space onto the document using a single digital printer, wherein the digital printer includes a first ink which is not machine-readable at a particular wavelength of electromagnetic radiation and a second ink that is machine-readable at the said particular wavelength").

The Examiner has taken the position that Nelson in view of Appellant's description of the Anoto system in the Background section of the patent application (see page 2, line 28 – page 5, line 19) discloses the first "printing" element of claim 1 (see pages 11-12 of the final Office action). In particular, the Examiner has taken the position that Nelson teaches printing

a first ink that is invisible to a sensor and printing a second ink that is visible to a sensor, the Background section of Appellant's application teaches machine-readable position-determining pattern adapted to enable a machine reader to determine its position in a pattern space and human discernable content adapted not to be read by said machine reader, and the combination of these teachings discloses the first "printing" element of claim 1.

Contrary to the Examiner's position, however, the teachings of Nelson and Appellant's Background description are not combinable.

- First, the printers disclosed in Nelson have only a single black channel (see col. 6, lines 25-29) and therefore are not capable of printing process black ink and the Anoto substitute black ink as proposed by the Examiner.
- Second, in accordance with Nelson express teachings, the visible ink (i.e., magenta) and the invisible ink (i.e., yellow) are applied to the same test pattern bars and mixed to produce an additive color combination (i.e., orange) that is visible to the sensor so that the ink density of the invisible ink can be checked (see, e.g., col. 7, line 48 – col. 8, line 2; also see col. 2, lines 34-37). Mixing the process black ink pen-readable pattern and the Anoto substitute black ink human-discernable content would defeat the object of the Anoto pen system by preventing the pen from determining its position on the document (see pages 3-4 of Appellant's application).

For these reasons, one skilled in the art would not have any apparent reason to combine the teachings of Nelson and Appellant's description of the Anoto pen system.

In addition, as explained above in connection with independent claim 83, one skilled in the art would understand from the Background description of the Anoto pen system that a digital pen enabled document would have to be produced by: first, printing the pen-readable pattern using a first printer with a black channel containing the process black ink; and second, printing the human-discernable content on top of the pen-readable pattern using a second printer with a black channel containing the Anoto substitute black ink. The printers described in Nelson and Clouthier also have only a single black channel (see, e.g., col. 6, lines 25-29 of Nelson, and col. 1, lines 28-34 of Clouthier). Consequently, one skilled in the art reading Nelson in view of the Background description of the Anoto system and Clouthier necessarily would include that two separate printers would be used to create a digital pen enabled document containing both a pen-readable pattern printed in process black ink and a human-discernable pattern printed in Anoto substitute black ink.

Thus, Nelson in view of the Background description of the Anoto system and Clouthier does not disclose or suggest the first "printing" element of claim 87. For at least

this reason, the rejection of independent claim 87 over Nelson in view of "Applicant's described Prior Art" and Clouthier should be withdrawn.

Nelson in view of the Background description of the Anoto system and Clouthier also does not disclose or suggest the "by-pass" element of claim 83 (i.e., "wherein data representative of content is half-toned, and wherein data representation of pattern bypasses a half-toning process").

In support of the rejection of independent claim 87, the Examiner has acknowledged that Nelson in view of the Background description of the Anoto system does not disclose or suggest the "by-pass" element of claim 83 (see second to last ¶ on page 13 of the final Office action). In an effort to make-up for this lack of disclosure, the Examiner has taken the position that "Clouthier et al teaches the feature of half toning data representative of content (Clouthier et al: Fig. 1, #26; Halftoning; Col. 4, lines 60-63) and wherein data representation of pattern bypasses a half-toning process (Figure 1, item 36; column 5, lines 1-15; Illustrates data by-passed through halftone module #26 via bypass to the print engine 28)" (see last four lines on page 13 and lines 1-2 on page 14 of the final Office action).

Contrary to the Examiner's position, however, Clouthier does not make-up for the failure of Nelson in view of the Background description of the Anoto system to disclose or suggest the "by-pass" element of claim 87. In particular, Clouthier discloses a system in which the halftoning of pixels is controlled by a halftone type identifier that is set by a classifying that classifies print data into one of plurality of image types that is associated with a particular halftone process (see, e.g., col. 2, lines 37-42, col. 3, lines 45-49, col. 5, lines 1-11 and 15-17). In accordance with Clouthier's disclosure "... any image type which is not to be subjected to a halftone operation may be assigned a '00' halftone type identifier" and "...if the halftone type identifier indicates that a bypass is to occur (i.e., '00'), the pixel is passed directly through halftone module 26 via bypass 36 to print engine 28" (col. 4, lines 4-6, and col. 5, lines 12-15; FIG. 1). Contrary to the Examiner's implicit assumption, however, Clouthier does not disclose anything that would have one skilled in the art any apparent reason to have data representation of the pen-readable pattern to by-pass a half-toning process. Indeed, Clouthier does not disclose what type of print data would be assigned the '00' halftone type identifier.

Since Nelson in view of the Background description of the Anoto system does not disclose anything about by-passing a half-toning process and Clouthier does not disclose

what type of print data should be passed directly through the halftone module via bypass 36, Nelson in view of the Background description of the Anoto system and Clouthier does not disclose or suggest the "by-pass" element of claim 88. For at least this additional reason, the rejection of independent claim 87 over Nelson in view of "Applicant's described Prior Art" and Clouthier should be withdrawn.

For the reasons explained above, the rejection of claim 87 over Nelson in view of "Applicant's described Prior Art" and Clouthier should be withdrawn.

G. Claims 88-92

Claims 88-92 are rejected under 35 U.S.C. § 103 (a) over Nelson (U.S. 6,132,024) in view of "Applicant's described Prior Art," Clouthier (U.S. 5,949,964), and Rumph (U.S. 6,429,948).

I. Dependent claim 88

Claim 88 depends from independent claim 87. Rumph does not make-up for the failure of Nelson in view of "Applicant's described Prior Art" and Clouthier to disclose or suggest the elements of independent claim 87 discussed above. Therefore, the rejection of claim 88 under 35 U.S.C. § 103(a) over Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph should be withdrawn for at least the same reasons explained above in connection with independent claim 87.

Claim 88 also is patentable over Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph for the following additional reason.

Claim 88 depends from claim 87 and recites that data representative of content is operated upon by a masking process, and data representation of pattern bypasses a masking process.

The rejection of claim 88 is premised on the Examiner's assertion that Rumph makes-up for the acknowledged failure of Nelson in view of "Applicant's described Prior Art" and Clouthier to disclose or suggest that the "data representation of pattern bypasses a masking process," as recited in claim 88 (see pages 14-15 of the final Office action). In particular, the Examiner has asserted that Rumph discloses this element of claim 88 in col. 34, lines 47-62, and in FIG. 24, steps S1070-S1710. Contrary to the Examiner's position, however, the primitive masking object process shown in FIG. 24 and described in col. 34, lines 47-62, is

applied to all primitive masking objects; there is operation by which data representation of pattern bypasses the masking process.

For this additional reason, the rejection of claim 88 over Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph should be withdrawn.

2. Independent claim 89

Independent claim 89 recites:

89. (Previously Presented) A method of printing on demand a page or other article, the method comprising:

printing, using a single digital printer, a machine-readable position-determining pattern with a first ink, wherein the pattern is configured to enable a digital pen to determine the pen's position in a pattern space, and wherein the pattern is readable at a specific, optionally non-visible, wavelength;

printing, using the single digital printer, human-discernable content in a second ink; and

processing the content data differently from the pattern data during data processing performed to print the document.

The rejection of independent claim 89 under 35 U.S.C. § 103(a) over Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph should be withdrawn because the cited art, taken alone or in any permissible combination, does not disclose or suggest each and every one of the elements of the claim.

For example, Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph does not disclose or suggest the first and second "printing" elements of claim 89 (i.e., "printing, using a single digital printer, a machine-readable position-determining pattern with a first ink, wherein the pattern is configured to enable a digital pen to determine the pen's position in a pattern space, and wherein the pattern is readable at a specific, optionally non-visible, wavelength" and "printing, using the single digital printer, human-discernable content in a second ink").

In the rationale given by the Examiner in support of the rejection of independent claim 89, the Examiner did not even attempt to show that Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph discloses or suggests the first and second "printing" elements of independent claim 89. Instead, the Examiner only explained his position in support of his belief that the cited references disclose the "processing" element of

claim 89 (see page 16 of the final Office action). Therefore, the Examiner has not established a *prima facie* case that independent claim 89 is obvious over the cited art. For at least this reason, the rejection of independent claim 89 should be withdrawn.

The rejection of independent claim 89 over Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph also should be withdrawn for the following additional reasons.

As explained above in connection with independent claim 83, the Examiner has acknowledged that neither Rumph nor Clouthier discloses or suggests using a single digital printer to print a machine-readable position-determining pattern and a human-discernable content. In an effort to make-up for this lack of disclosure, the Examiner has taken the position that Appellant's description of the Anoto system in the Background section of the patent application (see page 2, line 28 -- page 5, line 19) discloses using a single digital printer to print a machine-readable position-determining pattern and a human-discernable content. In particular, the Examiner has taken the position that the Background description "teaches the feature of having a first machine-readable ink and a second ink, or inks, that is/are not machine-readable at the same wavelength as said first ink" and a "system being configured to cause said printer to print documents having both" (see page 5, last ¶ of the final Office action).

Contrary to the Examiner's position, however, the Background description of the Anoto system does not disclose using a single digital printer to print a machine-readable position-determining pattern with a first ink (i.e., process black) and a human-discernable content in a second ink (i.e., Anoto substitute black). Instead, the Background description expressly discloses that the Anoto substitute black ink should be printed on top of the process black ink pattern using a printer in which the black channel of the printer (e.g., the K-channel in a CMYK printer) prints with the Anoto substitute black ink. The printer described in the Background description of the Anoto system has only a single black channel (see page 5, lines 12-14). Therefore, one skilled in the art would understand from this description that a digital pen enabled document is produced by: first, printing the pen-readable pattern using a first printer with a black channel containing the process black ink; and second, printing the human-discernable content on top of the pen-readable pattern using a second printer with a black channel containing the Anoto substitute black ink. Thus, the Background section of

Appellant's application does not disclose or suggest the first and second "printing" elements of claim 87.

The printers described in Nelson, Rumph, and Clouthier also have only a single black channel (see, e.g., col. 6, lines 25-29 of Nelson, col. 33, lines 39-45 of Rumph, and col. 1, lines 28-34 of Clouthier). Consequently, one skilled in the art reading Nelson in view of the Background description of the Anoto system, Clouthier, and Rumph necessarily would include that two separate printers would be used to create a digital pen enabled document containing both a pen-readable pattern printed in process black ink and a human-discernable pattern printed in Anoto substitute black ink.

Thus, Nelson in view of the Background description of the Anoto system, Clouthier, and Rumph does not disclose or suggest the first and second "printing" elements of claim 89. For this additional reason, the rejection of independent claim 89 over Nelson in view of the Background description of the Anoto system, Clouthier, and Rumph should be withdrawn.

The rejection of independent claim 89 over Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph also should be withdrawn because the cited art does not disclose or suggest the "processing" element of claim 89 (i.e., "processing the content data differently from the pattern data during data processing performed to print the document").

In support of the rejection of independent claim 89, the Examiner has acknowledged that Nelson in view of the Background description of the Anoto system, and Clouthier does not disclose or suggest the "processing" element of claim 89 (see first ¶ on page 16 of the final Office action). In an effort to make-up for this lack of disclosure, the Examiner has premised his rejection of claim 89 on the assertion that col. 2, lines 43-48 of Rumph discloses the "processing" element of claim 89. Contrary to the Examiner's position, however, col. 2, lines 43-48 of Rumph does not disclose or suggest "processing the content data differently from the pattern data during data processing performed to print the document," as recited in claim 89. Instead, the cited disclosure states in pertinent part that "the objects of the page image are processed optimally based on their object type, including using optimal compression and decompression techniques for each object type." This disclosure does not give one skilled any apparent reason to process "the content data differently from the pattern data during data processing performed to print the document." Indeed, as defined in independent claim 89, the "content data" and the "pattern data" are object-independent.

For the reasons explained above, the rejection of independent claim 89 over Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph should be withdrawn.

3. Dependent claims 90-92

Each of claims 90-92 depends from independent claim 89 and therefore is patentable over Nelson in view of "Applicant's described Prior Art," Clouthier, and Rumph for at least the same reasons explained above in connection with independent claim 89.

VIII. Conclusion

For the reasons explained above, all of the pending claims are now in condition for allowance and should be allowed.

Charge any excess fees or apply any credits to Deposit Account No. 08-2025.

Respectfully submitted,

Date: Aug. 16, 2010

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CLAIMS APPENDIX

The claims that are the subject of Appeal are presented below.

1-82. (Canceled)

83. (Previously Presented) A print control system configured to control a single digital printer having a first machine-readable ink and a second ink that is not machine-readable at the same wavelength as said first ink, said system being configured to cause said printer to print documents having both (i) machine-readable pattern printed in the first ink, wherein the pattern is configured to enable a digital pen to acquire data to enable its position in said pattern to be determined, and (ii) human-discernable content, printed in the second ink, that is not read by said pen in use, said system being configured to route data representative of content colour to (i) a colour separation process, and to (ii) a half-toning process, and to (iii) a masking process, and where said system is configured to route data representation of pattern so as to by-pass a half-toning process.

84. (Previously Presented) A control system according to claim 83 configured to route data representative of pattern so as to by-pass a masking process.

85. (Previously Presented) A control system according to claim 83 configured to route data representative of content through a linearisation process, and configured to route data representation of pattern so as to by-pass said linearisation process.

86. (Previously Presented) A control system according to claim 83 configured to route data representative of pattern so as to by-pass a masking process and configured to route data representative of content through a linearisation process, and configured to route data representation of pattern so as to by-pass said linearisation process.

87. (Previously Presented) A method of printing a document, comprising:

digitally printing a human-discernable content and a machine-readable position-determining pattern, configured to enable a digital pen to determine the pen's position in a pattern space onto the document using a single digital printer, wherein the digital printer

includes a first ink which is not machine-readable at a particular wavelength of electromagnetic radiation and a second ink that is machine-readable at the said particular wavelength ; and

printing the content with the first ink and not the second ink, at least where said content overlies said pattern ; and

printing the pattern using the second ink;

wherein data representative of content is half-toned, and wherein data representation of pattern bypasses a half-toning process.

88. (Previously Presented) A method according to claim 87 wherein data representative of content is operated upon by a masking process, and data representation of pattern bypasses a masking process.

89. (Previously Presented) A method of printing on demand a page or other article, the method comprising:

printing, using a single digital printer, a machine-readable position-determining pattern with a first ink, wherein the pattern is configured to enable a digital pen to determine the pen's position in a pattern space, and wherein the pattern is readable at a specific, optionally non-visible, wavelength;

printing, using the single digital printer, human-discernable content in a second ink; and

processing the content data differently from the pattern data during data processing performed to print the document.

90. (Previously Presented) A method of printing according to claim 89 further comprising treating the pattern as text content in a printer driver, and printing the pattern using exclusively one ink that is readable by a machine at said non-visible wavelength, or exclusively using a plurality of inks that are readable at said non-visible wavelength, and printing the content, at least that content which is superposed with said pattern, using exclusively an ink that is not machine-readable at said non-visible wavelength.

91. (Previously Presented) A method of printing according to claim 89, the method comprising taking an RGB version of an image from a computer and isolating the pattern in its own colour plane, optionally during a colour separation process, content being printed with other available colour planes not including said pattern colour plane.

92. (Previously Presented) A method according to claim 91 in which content colour plane data undergoes a half-toning and masking operation in order to determine what content, if any, is printed at each pixel of the printing operation, and wherein pattern colour plane data bypasses the half-toning operation.

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EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 CFR §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the pending appeal. Therefore, no copies are required under 37 CFR § 41.37(c)(1)(ix) in the pending appeal.

RELATED PROCEEDINGS APPENDIX

Appellant is not aware of any decisions rendered by a court or the Board that will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal. Therefore, no copies are required under 37 CFR § 41.37(c)(1)(s) in the pending appeal.